AVIATION

AUGUST 14, 1922 Issued Weekly PRICE 10 CENTS

American Air Transport

VOLUME XIII
Number 7

Four Dollars a Year

SPECIAL FEATURES

AIR POWER HAS COME TO STAY
THE BELLANCA CF 5-SEATER CABIN AIRPLANE
2600 GOVERNMENT PLANES NEEDED
WAR DEPARTMENT DEFINES FLYING SERVICE

THE GARDNER, MOFFAT CO., INC.
HIGHLAND, N. Y.
225 FOURTH AVENUE, NEW YORK

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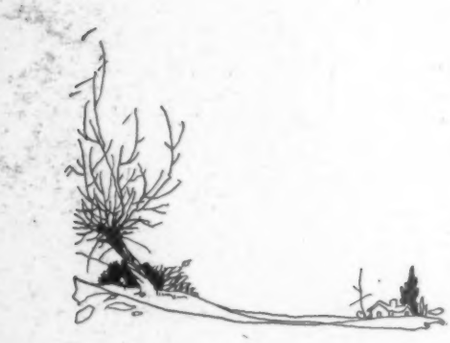

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WAR DEPARTMENT AUCTIONS

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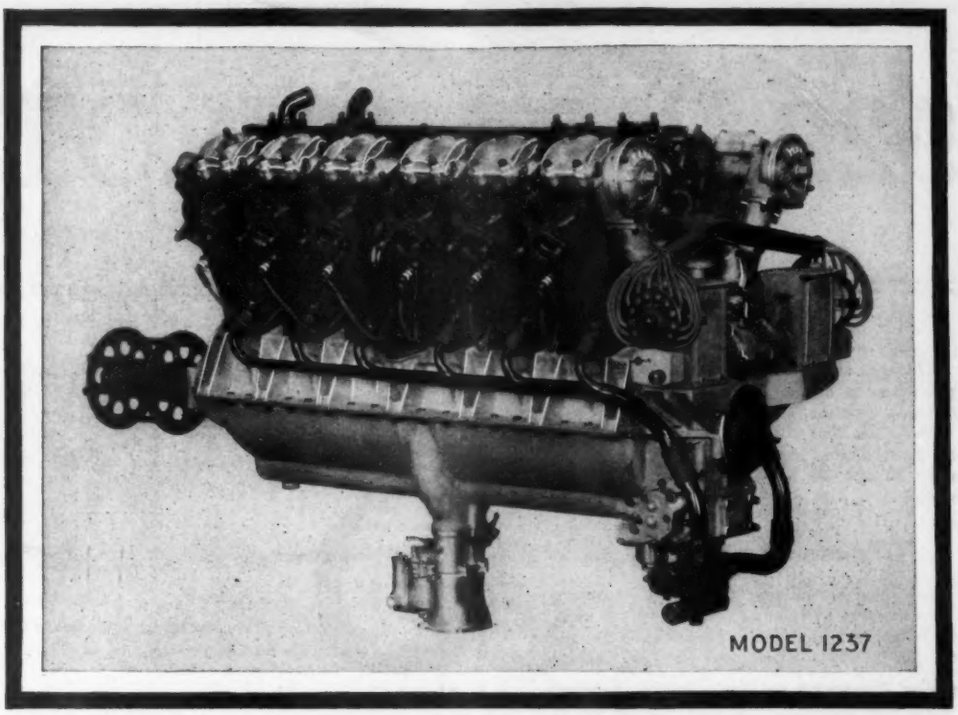

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Perhaps you own a ship now. If so, you know that purchases from the War Department are not duplicated elsewhere in value. If you have not discovered that fact, it will pay you to explore this new buying field.

Complete catalogs of offerings in these three sealed bid sales are yours for the asking. Get them now and see how you can save and make money. Write

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Offerings in these sales are stored at 17 Air Service Depots, from Long Island to Texas, and from Ohio to California. There's a depot near your town. Get the catalogs and then inspect at a neighboring depot. The Government reserves the right to reject any or all bids.

WAR DEPARTMENT

AUGUST 14, 1922

AVIATION

VOL. XIII. NO. 7

Member of the Audit Bureau of Circulations

CONTENTS

Editorials	181	Landing Field Information	191
Air Power Has Come to Stay	182	Canadian Aviation Statistics	191
The Bellanca CF 5-Seater Cabin Airplane	183	Preparing for the Night Air Mail	192
Detroit-Cleveland Airway a Success	185	Non-Spinnable Airplanes	192
The Need for Air Legislation	185	The Round-the-World Flight	192
War Department Defines Flying Service	186	Second National Aero Congress	192
Trade Notes	187	Army and Navy Air News	193
Information Wanted	187	Coming Aeronautical Events	195
2600 Government Airplanes Needed	190	Foreign News	196
Aviation and West Point	190		

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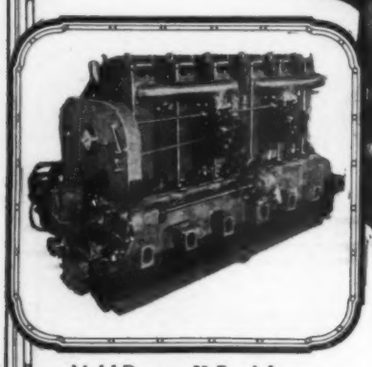

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Vol. XIII AUGUST 14, 1922 No. 7

Air Travel Safe

THE outstanding achievement of commercial aviation in the United States since the war has been the demonstration by the Aeromarine Airways that air travel is safe. The importance of this fact is not alone interesting to those who are engaged in aviation, but in a much larger way to the public which has become timid owing to accidents caused by unregulated flying, irresponsible fliers, and uninspected aircraft.

Without a subsidy, operating over the open sea from Key West to Havana, a most difficult route, and over the Detroit to Cleveland airway, these flying boats have, during three years, carried eleven thousand paid passengers, making over a million passenger miles flown without a single mishap to any of them. Such an accomplishment is convincing proof that the air is safer than the road and that all aviation needs to become a great transportation system is proper supervision and maintenance. The operating personnel of Aeromarine Airways have given this and the result has been a perfect record.

Regularity of schedule has also been attained. The air liners leave and arrive on the minute. Wind and weather have made no difference to these sturdy craft. Safety, and certainty of the time of arrival have made these lines attract the thousands of passengers that have learned the advantages of air travel. The maintenance of the ships of this company is of the highest order and this is doing more to attract patronage than merely the pleasure of air travel. Aside from the safety and utility, the scenic features of flying over water have been enjoyed by every passenger. The comfort afforded travelers in these air limousines while floating through the air over beautiful stretches of water, has made this link of a most attractive and thrilling experience.

Business men have awakened to the fact that aircraft can play an important part in their business. Instances are known of orders being secured by salesmen because they reached their customers first, by flying. An executive in Cleveland was needed in Detroit for an important conference. In ninety minutes he was there. It would have taken him five and a half hours by the fastest train. Such a service, when understood, will be as much a part of business procedure as the railroad expense voucher is to-day.

The increased cost of an improved method of transportation has always been an obstacle at first, but it is soon understood. Compare railroad fares. To go on a train running at sixty instead of fifty miles an hour, the public has been willing to pay a heavy excess fare. But the great expense of upkeep of roadbed and rolling stock has shown the railroads that they have reached their maximum speed. Now comes the air traveler who requires speed—not fifty or sixty miles an hour, but ninety to a hundred and over. The air is the only possible way to attain it. Even were it practicable, the rates the railroads would have to charge for such a service would have to exceed the present air tariff. Those who have ridden on trains running seventy miles an hour and experienced the discomforts of vibration and the ever present feeling of danger of a faulty rail can best appreciate the slogan "Speed with Safety".

All commercial aviation needed was just what the Aeromarine organization has demonstrated, that there is safety in regulated flying, that the high speed of aircraft can be used in business where the saving of time often means a gain of thousands of dollars in business, and that the cost is not as much as any other carrier would have to charge were it to insure travel at similar speed.

West Point and the Air Service

AN indication of the growing importance the Air Service assumes in the opinion of the Army is shown by the selection of this branch of the service by cadets of the class of 1922 at West Point Military Academy. Nineteen of the one hundred and thirty-one graduates chose this year the Air Service. The Infantry received fifty-one, and the Field Artillery twenty-three assignments, while the Cavalry, Coast Artillery, Engineers and Signal Corps each received fewer than the Air Service.

As the older branches of the service have received specialized attention in the curriculum at the Military Academy for many years, and as aviation has only recently been included, the significance of these figures is of great interest.

The War Department should give every cadet a fundamental training in aviation, both by lectures and at flying fields, so that they may have the same familiarity with the Air Service as they have, say, with the Artillery and Cavalry.

A staff of Air Service officers should be assigned to West Point for this purpose. Then the Military Academy will be giving the Air Service an officer material that is properly grounded in aviation. The cadets will then enter this branch of the Army with full knowledge of its great possibilities.

A Promising American Design

THE new Bellanca monoplane which is described in this issue is a development of which the American aircraft industry may take justified pride. As may be seen from the specifications and performance figures published, this machine carries in a cabin four passengers and a pilot with fuel for a 600 mile flight with only a 90 hp. engine. This corresponds to a pay load of 7.5 pounds per horsepower, whereas the pay load of a Mail DH is only 1½ pounds, and the best foreign machines carry at the most only about 5 pounds per horsepower.

It is gratifying that this country should produce a commercial airplane so far in advance of European subsidized designs.

Air Power Has Come to Stay

By Brig. Gen. William Mitchel

Assistant Chief of Air Service, U. S. Army

Every first-class nation in the world is organizing its air power in something the same way that sea power has been organized heretofore—that is, provision is made for a fighting air force to take the offensive immediately upon the declaration of war. Behind this is a merchant air force which will supply the fighting air force with the necessary personnel (both navigating and mechanical) in time of emergency. Armies can not be mobilized, concentrated and prepared for battle in less than two weeks' time, even under the very best conditions, whereas air forces can be mobilized at a point in the interior of the country, and, in a few hours, be over the frontiers and striking at the enemy's communications.

Each country in Europe has studied its military problem carefully in accordance with its national policy, and has assigned specific duties to its air, land, and water forces.

Air Forces the First Line of Defense

All countries consider their air forces their first line of defense, and, in order to apply the air force quickly and effectively, airways have been organized and equipped everywhere in Western Europe. The airways have three classes of airdromes. In the first class are the great airports which are organized in very much the same way a seaport is, with custom houses, medical inspection, police, accommodations for passengers, and means for bringing them to and from the airdromes. The second class of airdrome is the ordinary landing field used for local flying, where foreign planes may land only in case of trouble and where air squadrons may mobilize in case of war. Those of the third class are the emergency landing fields which are specially selected localities, free from obstructions, on which grazing or the raising of low crops which will not interfere with landing, is allowed. They have telephonic communication only with main telephone lines.

In the foreign air services, all the meteorology is under the direction of the air forces. Meteorology is just as important for aircraft as block signals for a railroad. Telephone and telegraph are too slow to transmit the storm signals and other weather data, so that complete radio systems are established under the air forces for transmitting air data of all kinds.

The commercial aircraft are highly subsidized, as they can not yet compete with other means of transportation for short distances. However, it is expected that they will be on a paying basis in five or ten years. The subsidies given amount to about half the cost of the airplane, that is, if a person buys an airplane of a standard type, the government pays half of its initial cost, and he pays the other half. If he operates it, he gets a subsidy for the number of passengers, the amount of freight, the speed, and the number of pilots he maintains. This again amounts to about half the operating expenses, and, in addition, a five per cent net income is guaranteed on the capital invested.

Making Commercial Aircraft Pay

All these things are necessary to develop commercial aviation because, at the end of the war, there were no real commercial planes. A very good example of this may be found in what it costs to operate a De Haviland IV airplane with Liberty engine. The average cost per passenger-mile including overhead is about sixty cents. This De Haviland IV, however, is a war plane in which speed, climb, and strength are carried to their maximum limits. In a commercial plane, which has the power and weight ratio reduced to the most economical point, 180 hp. can carry about eight passengers, in which case the cost per passenger-mile would have been from eighteen to twenty cents, or one-third of what it was in our war plane. It will not be long before this figure of eighteen to twenty cents is again cut two-thirds. When this occurs, the airplane will be able to compete with any other method of transportation for distances over three hundred miles.

The commercial air lines in Europe, in spite of the fact that their equipment is still in a development stage, are remarkably free from casualties. In fact, one company has operated for over two years now without a single casualty. It must be remembered that the difference between the fatalities in fighting air units and those in commercial aircraft is very great. Fighting aircraft are developed to the absolute maximum of speed, gun-power, maneuverability, and climb. They fly in compact formations with a great many acting together. As they have such great speed, their landing speeds are very high. Their engines have been developed to the lightest point possible; consequently, more troubles occur with them than with the heavier commercial types. Commercial planes, on the other hand, fly along regular established routes, one by one. They are not particularly fast, but are good weight carriers. They land very slowly. They are always well supplied with meteorological data, and fly along well identified airways. With a properly organized and regulated commercial air service, the casualties should be very small.

What this Country Needs

What we need in this country is the recognition of the fact that an air force is the first line of defense of the country, and the proper organization of our air forces in accordance with this. The air force should be given the absolute responsibility for the defense of the coasts and frontiers against attack from the water or the air to a distance of 200 miles. Airways should be organized throughout the United States for use with the commercial air service and for the use of the fighting air forces in going from one place to another. Our commercial air service should be subsidized, and proper communication centers should be established in each great center of population. By this is meant that railways, steamships, airplanes, and airships should all land at the same place.

Take, for instance, the lake front of Chicago. A section of the waterfront can be roofed over, and the top of it used for the landing of airplanes. The railway terminals can be under this, and the steamship wharves immediately alongside. Office space could be rented in this structure, as well as space for markets and other mercantile pursuits, and in this way pay for the upkeep of the structure.

All foreign countries have concentrated their overhead for aeronautics to a greater or less extent. We have not done so in this country, and are still carrying on our air development in an obsolete way. Free discussion of the subject should be encouraged, and a campaign of education as to what air power means should be carried on throughout the country by all those interested in aeronautics who know its value in our economic development and in the national defense of our country.

American Air Attaches

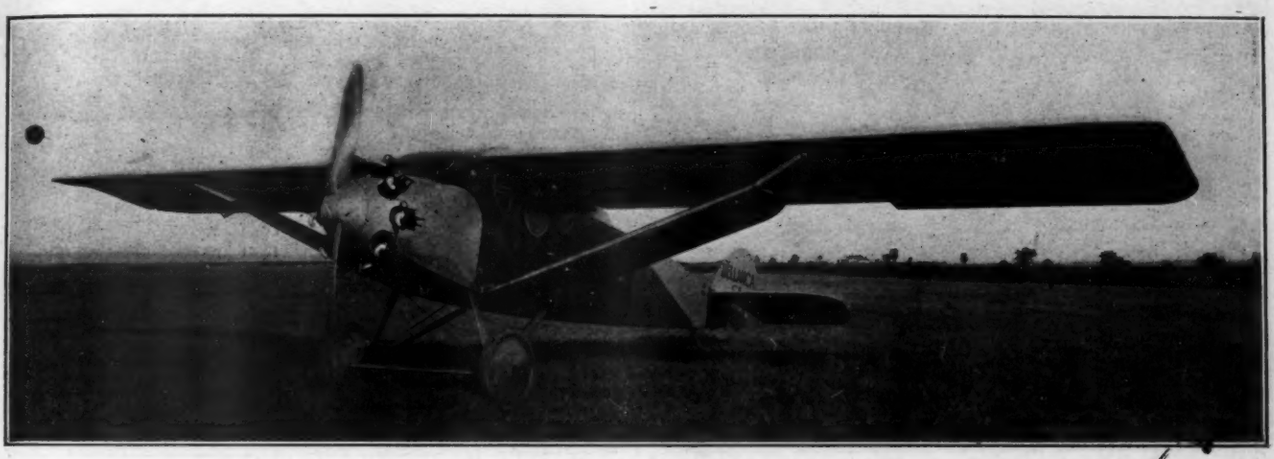
The United States maintains six Air Attachés abroad, according to the American Consular Bulletin, besides thirty-four Military Attachés accredited to fifty-two countries.

Two of the Air Attachés are stationed at Berlin; Maj. Benjamin D. Foulois and Maj. Harold Geiger. Maj. Charles C. Benedict is serving in London; Maj. Carlyle H. Walsh at Paris; Maj. James E. Chaney at Rome, and Maj. Arthur R. Christie at Tokyo. They are all members of the Army Air Service. Of American Military Attachés, Assistants and Observers there are to date eighteen officers stationed in European Capitals; eight in Latin America; five in the Far East, and three in the Near East.

The Bellanca CF 5-Seater Cabin Airplane

Latest American Commercial Airplane Carries Pilot And Four Passengers with Fuel for 600 Mile Flight

The Bellanca CF 5-seater cabin airplane, designed and built by G. M. Bellanca and financed by Victor H. Roos and others of Omaha, Nebr., was tested at the Army Field at Fort Crook, Nebr., June 8, 1922, with remarkable success. This machine embodies some unusual features in combining low landing speed, quick take off and high speed with high pay load, great simplicity, absence of wires, (although it is not of the internal braced or cantilever type), great economy, compactness and lightness. The main purpose of the builder and designer of this machine has been the one of increasing the carrying capacity per b.hp. of the useful load; to reduce the cost of manufacturing so that the selling price would be substantially low; and to reduce the cost of operation and maintenance to the minimum.



Three-quarter front view of the Bellanca CF cabin plane—the neat cowling of the 90 hp. Anzani engine is noteworthy

Some of its Unusual Features

Regarding its strength, the weakest point of the machine is at the cantilever point of the rear beam of the wings, where the load factor is 9, while at the cantilever point of the front spar it is 10½. The safety factor for the reverse air load is 5½, which is considered more than sufficient.

As to the efficiency of the Bellanca CF it is sufficient to note that this machine, fitted with only a 90 hp. motor, is able to carry five persons at the speed of 109.8 m.p.h. The speed was measured at the Army field, Ft. Crook, Nebr., running six times a measured course of one half mile and making the average of the various times taken by means of flags and stop watches. The average time to cover the one half mile was 16.4 sec.

The inherent stability of this ship is unusual: after the first flight, Pilot Harry G. Smith (Mail pilot between Omaha and Cheyenne) released the controls at the height of 400 ft. and flew four complete circles, using only the rudder bar. The amount of banking of the machine during such circles was so correct that it could not have been improved in any way by the intervention of the pilot. In another test flight Mr. Smith subjected the ship to all possible acrobatic maneuvering, and with extreme facility the machine performed loops, spins, side-skids, dives, sharp turns, etc. The pilot, in explaining the handling of the ship in such maneuvers, expressed himself that it "handled like a fighting ship but with more uniform and accurate action". "If this machine," he said, "had a dual control I feel that I could teach anyone to fly in one week." As for spinning, the pilot said that the machine goes into a spin with extreme difficulty, and it goes out of it immediately.

An important feature of the Bellanca CF is its remarkably flat gliding angle, which is 1 in 12.

Its Performance at the Monmouth Meet

At the flying meet held at Monmouth, Ill., the machine immediately proved its worth by winning first prizes in the four contests entered in.

In the speed contest the Bellanca CF covered the 15-mile triangular circuit in 9 min., 15 sec. while the next best with 150 hp. motor covered the same course in 11 min. 30 sec. In another free for all speed contest the same course was covered by an SVA (220 hp. SPA) in 8 min. 33 sec.

The low fuel consumption of the Bellanca CF was demonstrated in its flight from Fort Crook to Monmouth, passing through Des Moines: the trip of 301 miles was covered in 3 hr. 11 min., using only 21.5 gal. of gasoline, although an average headwind of 9 m.p.h. retarded the progress of the machine. The cruising speed of the machine during said trip was 95 m.p.h. and the fuel consumption was only one gallon per 14 miles. Without the wind this ship makes 90 miles for every 5.8 gal. of gasoline and oil, or 16 miles to the gallon of fuel.

In the gliding contest the machine took 4 min. 43 sec. to come down from 2000 ft., thereby winning first prize, while the nearest competitor, a light biplane, touched ground took 3 min. 44 sec. The Bellanca CF in the 4 min., 43 sec. of glide covered the distance of 4½ miles at the remarkable gliding rate of 12 to 1. The utility of such a feat for the choice of a landing field in case of engine trouble can hardly be over-estimated.

In the climbing contest the Bellanca CF climbed 7000 ft. in 11 min., while the second machine with a 150 hp. motor made only 6000 ft. in 14 min., and the third airplane with a Hispano motor, made only 5,600 ft. in 12½ min.

Wing Construction

Extreme simplicity is the main characteristic of the wing construction. Spars are of Port Orford cedar I-beam cross section. The ribs are a convenient combination of bass wood, ash and cloth. The average strength of these ribs has been proven to be 700 lb., while they weigh only 9 oz. each.

The wing spars project out of the inner part of the wings form a length of 20 in., and by means of said projection the wings are attached to the fuselage, which attachment is such that the spars come in contact at the middle line on the top of the machine, forming thereby a continuous column of compression, in such a way that the main stresses of the wings are not transferred at all to the fuselage.

The lower, or auxiliary wings, are much smaller than the upper or main wings, and the inner ends of which are attached

to the bottom side of the fuselage and the outward ends to the cantilever points of the spars of the main wings, thereby taking care of the landing and flying stresses. By means of this arrangement the usual bracings, stream-line strut-braces and wires are completely eliminated, thereby decreasing the weight and head resistance considerably, and creating at the same time an additional source of lift. Another important advantage of this combination, is the one furnishing a efficacious means of lateral balance effectuated by their position at an exaggerated dihedral.

The load factor for the lifting stresses is 14 and is composed of ¼ in. cables, which start from the cantilever points of the spars of one of the main wings and pass through the auxiliary wings and the lower part of the fuselage, and are connected at the cantilever point of the spars of the other wing. The *L/D* of the upper wing, although of a thick section and adapted to lightness of construction, is 20, and the center

Three-quarter rear view of the Bellanca CF cabin plane, from which the ample range of vision obtained by the pilot may be grasped

of pressure displacement is only 10 per cent of the cord, which quality contributes to the balance of the machine and also to its lightness. The drift at low angle is very small, making the wing well adapted for high speed.

The cross section of the lower wing, the thickness of which is 16 per cent of the cord, is such that its *L/D* is 16.4 and the L/D of the complete combination (main wings, auxiliary wings and resistance of short wires and struts) is 18. The superiority of this combination compared to internal braced wings is readily seen: lighter construction, higher *L/D*, smaller drift at low lift co-efficient.

Safety Factor

The fuselage has been designed to withstand a load of 35 lb. per sq. ft., applied at the tail surfaces, stabilizer and elevators, and beside that the various members have been figured for a factor of safety of 2, making the fuselage capable to stand a load of 70 lb. per sq. ft. at the tail surfaces. The strength of the fuselage has been proven in various tests, landing the ship in plowed fields, wheat fields, etc., and getting off from the same places very easily, as well as by all possible acrobatic maneuvers, including steep dives and flattening out sharply.

The stabilizer and elevators are made to withstand a load of 50 lb. per. sq. ft., and the rudder for a load of 35 lb. per sq. ft.

The landing gear has been designed for a load factor of 8.

Fuselage

The fuselage, which is of good streamline form, is of the composite type; box-veneer construction with internal reinforcing of Port Orford cedar forming a stiff frame of triangles and box-girder construction with cables and wires.

The cabin is of veneer construction and accomodates four people with comfort, although six may be carried in an emergency.

The location of the cabin is such that the weight of the passengers coincides at all times with the center of gravity, which makes the machine as well balanced with a full load as with a light load. This arrangement makes the use of an adjustable stabilizer unnecessary. The passengers in the rear seat face forward while those in front can face in either direction.

The interior height of the cabin is one inch higher than that of an automobile limousine. Three windows are located on each side of the cabin, and one window in the front, to give a view ahead.

The engine compartment is completely separated from the passenger compartment, making it possible to smoke and reducing the noise of the motor.

Ventilation is provided for by convenient air intakes and the front window which can be opened as widely as desired. Two baggage compartments are also provided for.

Power Plant

An air-cooled 10 cylinder Anzani 90 hp. motor is used, which weighs 385 lb. The engine is so mounted as to form with the rest of the body, a perfect streamline form with low head resistance.

The propeller, also designed by Professor Bellanca, is 8 ft. in diameter and has an 8 ft. pitch. The propeller is provided with an aluminum spinner with openings to take in air and thereby cool the covered part of the engine. Only the cylinders heads of the engine are exposed and they are well cooled by the air stream obtained from a speed of 110 m.p.h. The cooling obtained by this arrangement has been found very satisfactory. The machine has already flown for continuous periods of 3 hr. without a sign of overheating.

The motor is furnished with two magnetos and a double oil pump assuring proper ignition and sufficient lubrication. The carburetor is a Zenith and permits a very slow idle speed.

The Landing Gear

The chassis is of the ordinary V type, consisting of two ash streamline struts glued together with birch veneer. The arrangement of the shock-absorbers is novel and affords a light and simple construction and reduces at the same time parasite resistance. The spreader board is of lifting cross section.

Tail Group

The *empennage* is composed of non-lifting fixed stabilizer, to which are fastened the elevator flaps. The attachment of the stabilizer is such that it can easily be detached by removing four cotter pins. The rudder is of oval shape and of sufficient area to insure complete control in landing the machine on the ground.

Controls

Lateral and longitudinal balance is operated by stick control; the rudder is operated by foot bar. The stabilizer, elevators, ailerons and rudder are of very generous size, considering the design of the machine, and answer promptly to the various maneuvers.

Assembly Facility

The assembling and dissembling facilities of this machine are very remarkable. Once the machine has been adjusted no other aligning is necessary. The first time this machine was taken from Omaha to Ft. Crook, Nebr., for its initial trial, it was assembled in 30 min. ready to fly.

GENERAL SPECIFICATIONS

Type of Machine	Cabin monoplane for four passengers and pilot.
Span, upper plane	40 ft.
Span, lower plane	22 ft.
Chord, upper plane	6 ft. 6 in.
Chord, lower plane	2 ft. 6 in.
Total wing area	290 sq. ft.
Length, overall	23 ft. 10 in.
Weight, empty	950 lb.
Useful load	1040 lb.
Weight, loaded	1990 lb.
Weight per sq. ft.	6.85 lb.
Pay load, exclusive of gas and oil for 600 miles and pilot	680 lb.

PERFORMANCE

Light Load 1200 lb.	Maximum speed	109.8 m.p.h.
	Minimum speed,	30 m.p.h.
	Speed range,	3.7 to 1.
	Climbing, rate per minute	1100 ft.
	Climb in 10 minutes	7000 ft.
	Minimum effective hp. required for horizontal flight	14 hp.
Full Load	Maximum speed,	108 m.p.h.
	Minimum speed,	40 m.p.h.
	Climbing, rate per minute,	600 ft.
	Climbing in 10 minutes,	5000 ft.
	Minimum effective hp. required for horizontal flight	31 hp.
Gliding angle		12 to 1.
Capacity of tanks, (oil and gas)		38 gal.
Fuel consumption at full speed (oil and gas)		9.5 gal. per hour
Range, full speed		440 miles.
Range, cruising speed		600 miles.
Miles to gallon of fuel, (oil and gas)		16 miles.

Detroit-Cleveland Airway a Success

The double daily flying boat service instituted between the two Lake cities by the Aeromarine Airways is meeting with a great and deserved success.

Every day, promptly at 9 a. m. one of the Aeromarine eleven passenger enclosed-cabin flying limousines leaves the airport in Detroit for Cleveland, and in the latter city another flying boat of the same type takes the air bound for Detroit. The return flight is made from both cities at 5 p. m. The flying time in this division of the Aeromarine Airways is 90 min. as compared to 5 hr. on the train. The fare is $75 round trip and $40 one way. C. F. Redden, president of the company, through whose efforts this airway was established, states that as the volume of passenger traffic grew so would the rate of fare be reduced.

So popular has this new mode of travel between Detroit and Cleveland become that reservations have to be made several days in advance if seats are desired. On Fridays and Saturdays it is almost impossible to secure seats unless ample advanced notice is given the company. Four large flying boats are used on this service. They are the famous Santa Maria, the Wolverine, the Buckeye and the Niagara.

The demand for seats on this new line has become so great that a fifth 11-passenger cabin flying boat has been ordered to proceed from the Southern air base to Detroit via the Atlantic Coast, New York, Montreal, Buffalo and Cleveland. Its addition to the Great Lakes fleet will allow for a reserve plane at each terminal thus insuring an uninterrupted schedule at all times.

The equipment at both the Detroit and Cleveland terminals is complete in every way. A luxurious house boat, from which passengers are taken aboard the flying boats, a fast motor launch and automobile parking space at the landing docks make air travel via Aeromarine flying boats comfortable from the moment the ticket is collected at the terminal until the passenger arrives at his destination.

As the crow flies, the distance between cities is 112 miles and an elaborate and carefully planned method of communication has been established through signal stations, en route. When the morning boat leaves Detroit, at the main operating base, it flies down the Detroit River and lands at the foot of First Street, in the heart of the downtown business section where additional passengers are taken aboard. Taking the air once more the flight is continued over the river until Lake Erie is reached. At the mouth of the Detroit River is a signal tower and the exact time the flying boat passes is immediately telephoned back to Detroit. There are other signal stations en route, at Put-In-Bay, Vermillion, Ohio, and Lorain, Ohio, and the same procedure is followed.

With this method the boats are under constant observation and the exact time of their arrival can be announced at the dock a half hour before the flying boat arrives.

The schedule has been maintained without interruption since the service was started and in nearly every case the boats arrive on time. In the matter of departure also the strictest attention is paid to getting the boats away on time and already several passengers, arriving a few minutes late, have been forced to realize that the "Black Tail" airliners stick to their schedule.

In commenting on the successful operation of this new division of the Aeromarine Airways, Mr. Redden said: "The significance of this first commercial air line between two big cities has been grasped not only by those vitally interested in aviation in this country but also by business men who have been quick to realize how much time may be saved in their transactions between Detroit and Cleveland. A business man can leave either city in the morning, fly across the Lake, see the people he has appointments with and be back home in time for dinner."

The Chambers of Commerce in both cities have commended Mr. Redden for his enterprise and vision in establishing the first commercial air line between two big business centers.

The Need for Air Legislation

The need for legislation to control the operation of civil aircraft and to provide for the inspection of planes and licensing of pilots engaged in commercial aviation was emphasized in a statement by Rear Admiral Moffett, chief of the Bureau of Aeronautics of the Navy Department, in connection with the fatal accident which occurred when a land plane piloted by Herbert J. Fahy crashed and killed a passenger in an airplane at the Virginia end of the highway bridge in Washington, on July 25.

"Pending legislation will go far toward the elimination of such unfortunate occurrences" said Admiral Moffett. "At the present time there is practically no check on the operations of civil aircraft and the consequent dangers to the public which attend the uncontrolled flying of civilian planes can only be done away with by providing for means to ensure safety and reliability in such planes and the pilots who fly them."

Fahy was previously a pilot in the Army reserve and his connection with the Army was severed shortly after the occasion of the Lincoln Memorial dedication when he flew low over the crowd during the address made by President Harding, drowning out the words of the President and creating a stir of apprehension in the audience.

It was pointed out by Bureau of Aeronautics officials that the recent increased interest and activities in aeronautics which has been evidenced will inevitably lead to an increasing field of usefulness for the airplane as a means of transportation, and by this token the need for proper control to eliminate danger to the public exists at the present time. The operation of aircraft is analagous to the operation of steam boats and other craft engaged in interstate commerce. These are subject to rigid inspection of material and safety requirements and the qualifications of personnel operation then must meet the required standards.

War Department Defines Flying Service

General Order No. 30 Defines Flying Service In Army, Navy, Marine Corps and Coast Guard

General Order 30, July 19, 1922, War Department, defines flying service, which is made applicable to all officers, warrant officers and enlisted men of all branches of the Army, Navy, Marine Corps and Coast Guard, for the purpose of carrying into effect the provisions of Section 20 of the act of Congress approved June 10, 1922, relative to increased pay for duty, involving flying and allowance for traveling expenses incident thereto.

Paragraphs 9 and 10 of the new flying regulations, which took effect July 1, 1922, draw a very clear line between flying and non-flying duty in the Air Service. Under these paragraphs an officer or enlisted man must be really an active flier to draw the extra pay provided for in the act.

When traveling by air on duty with troops, under competent orders, actual and necessary expenses, not to exceed $8 a day, shall be paid to officers, contract surgeons, warrant officers and enlisted men of the Army, Navy, Marine Corps and Coast Guard.

The order defines flying service as follows:

Pilots, Observers and Students

Definitions:—(a) The term "qualified aircraft pilot," as used in these regulations, shall be construed to include any commissioned or warrant officer or enlisted man of any branch of his respective service who has been, or may hereafter be rated an Airplane Pilot or Airship Pilot by competent authority in the Army, or who has been, or may hereafter be designated or appointed a Naval Aviator or Naval Aviation Pilot by competent authority in the Navy or Marine Corps, or who has been, or may hereafter be designated or appointed a Coast Guard Aviator or Coast Guard Aviation Pilot by competent authority in the Coast Guard.

(b) The term "qualified aircraft observer," as used in these regulations, shall be construed to include any commissioned or warrant officer or enlisted man of any branch of his spective service who has been, or may hereafter be rated an Airplane Observer or Balloon Observer by competent authority in the Army, or who has been, or may hereafter be appointed a Naval Aviation Observer by competent authority in the Navy or Marine Corps, or who has been, or may hereafter be appointed a Coast Guard Aviation Observer by competent authority in the Coast Guard.

(c) The term "student aviator," as used in these regulations, shall be construed to include any officer or warrant officer in any branch of his respective service who is appointed a Student Naval Aviator by competent authority in the Navy or Marine Corps, or who is appointed a Student Coast Guard Aviator by competent authority in the Coast Guard, and who is duly assigned to a course of instruction in piloting aircraft.

(d) The term "student aviation pilot," as used in these regulations, shall be construed to include any enlisted man in any branch of his respective service who is appointed a Student Naval Aviation Pilot by competent authority in the Navy or Marine Corps, or who is appointed a Student Coast Guard Aviation Pilot by competent authority in the Coast Guard, and who is duly assigned to a course of instruction in aircraft pilot duties.

(e) The term "student aviation observer," as used in these regulations, shall be construed to include any officer, warrant officer, or enlisted man, in any branch of his respective service, who is appointed a Student Naval Aviation Observer by competent authority in the Navy or Marine Corps, or who is appointed a Student Coast Guard Aviation Observer by competent authority in the Coast Guard, and who is duly assigned to a course of instruction in aircraft observer duties.

2. Each officer or warrant officer who is a qualified aircraft pilot and who is not unfit for duties as such, and who is commissioned in, or duly assigned or attached to the Air Service of the Army, or who is duly assigned to duty in any part of the aeronautic organization of the Navy, Marine Corps, or Coast Guard, including those assigned to special, administrative, or school duties, shall be detailed to duty involving flying; such details shall be made by the Chief of Air Service for the Army, the Chief of Bureau of Navigation for the Navy, the Major General Commandant for the Marine Corps, or by the Captain Commandant for the Coast Guard, and such detail shall remain in force for the entire period of such commission, assignment, or attachment, except as hereinafter provided in paragraphs 9 and 10.

3. Each officer or warrant officer who is a qualified aircraft observer, or an aircraft pilot who is unfit for piloting duties but is fit and desired for other flying duty, and who is commissioned in, or duly assigned, or attached to the Air Service of the Army, or who is duly assigned to duty in any part of the aeronautic organization of the Navy, Marine Corps, or Coast Guard, shall be detailed to duty involving flying; such detail shall be made by the Chief of Air Service for the Army, the Chief of Bureau of Navigation for the Navy, the Major General Commandant for the Marine Corps, or by the Captain Commandant for the Coast Guard, and such detail shall remain in force for the entire period of such commission, assignment, or attachment except as hereinafter provided in paragraphs 9 and 10.

4. Each officer of the Medical Corps of the Army, or the Navy who is duly assigned to duty with any aeronautic headquarters or unit of the Army, Navy, Marine Corps, or Coast Guard, or assigned to duty at a station where there is an aeronautic unit, and who has duly qualified as a flight surgeon, shall be considered as on duty involving flying when detailed to such duty involving flying by the Chief of Air Service for the Army, or by the Chief of Bureau of Navigation for the Navy and Marine Corps, and such detail shall remain in force for the entire period of such assignment, except as hereinafter provided in paragraphs 9 and 10.

5. Each officer or warrant officer other than student aviators of the Navy, Marine Corps, and Coast Guard, and those specified in paragraphs 2, 3, and 4, who is duly assigned to duty that includes flights in aircraft, shall be detailed to duty involving flying; such detail shall be made by the Chief of Air Service for the Air Service of the Army, the Secretary of War for other branches of the Army, the Chief of Bureau of Navigation for the Navy, the Major General Commandant for the Marine Corps, or by the Captain Commandant for the Coast Guard, and such detail shall remain in force for the entire period of such assignment, except as hereinafter provided in paragraphs 9 and 10.

6. Each officer, warrant officer or enlisted man of the Army who is duly assigned to a course of instruction for qualification as aircraft pilot or aircraft observer, and each officer, warrant officer or enlisted man of the Navy, Marine Corps or Coast Guard who is duly appointed a student aviator, a student aviation pilot, or a student aviation observer, shall be detailed to duty involving flying; such detail shall be made by the Chief of Air Service for the Army, the Chief of Bureau of Navigation for the Navy, the Major General Commandant for the Marine Corps, or by the Captain Commandant for the Coast Guard, and such detail shall remain in force for the entire period of his course of instruction except as hereinafter provided in paragraphs 9 and 10.

Enlisted Men on Flying Duty

7. Each enlisted man who is serving in the Air Service of the Army, or in any part of the aeronautic organization of the Navy, Marine Corps or Coast Guard, and who is a qualified aircraft pilot, shall be detailed to duty involving flying by his commanding officer; such detail shall remain in force for the

entire period of such service, except as hereinafter provided in paragraphs 9 and 10 or until revoked by his commanding officer; such detail and its revocation shall be reported to the Chief of Air Service for the Army, the Chief of Bureau of Navigation for the Navy, the Major General Commandant for the Marine Corps, or to the Captain Commandant for the Coast Guard.

8. Each enlisted man who is serving in the Air Service of the Army, or in any part of the aeronautic organization of the Navy, Marine Corps, or Coast Guard, and who is not a qualified aircraft pilot or observer, but is assigned to duty that includes flights in aircraft, shall be detailed to duty involving flying by his commanding officer; such detail shall remain in force for the entire period of such assignment except as hereinafter provided in paragraphs 9 and 10, or until revoked by his commanding officer; such detail and its revocation shall be reported to the Chief of Air Service for the Air Service of the Army, the Secretary of War for other branches of the Army, the Chief of Bureau of Navigation for the Navy, the Major General Commandant for the Marine Corps, or to the Captain Commandant for the Coast Guard.

9. Each officer, warrant officer or enlisted man of the Army, Navy, Marine Corps, or Coast Guard, who is detailed to duty involving flying, shall be required to make at least ten flights or be in the air a total of four hours during each calendar month; provided that an officer, warrant officer, or enlisted man so detailed, who is unable to meet these requirements during any calendar month for any reason other than sickness or injury, shall be regarded as having met them if he performs a minimum of twenty flights or is in the air a minimum of eight hours prior to the end of the following calendar month; provided further, that an officer, warrant officer or enlisted man so detailed, who is unable to meet this alternative requirement for any reason other than sickness or injury, shall be regarded as having met this requirement if he performs a minimum of thirty flights or is in the air a minimum of twelve hours prior to the end of the calendar month thereto succeeding. Failure to comply with the foregoing requirements shall have the effect of suspending the detail to duty involving flying, but only for the period during which the foregoing requirements as to flights are not complied with; provided that, in case of any officer, warrant officer, or enlisted man, who, by reason of sickness or injury incurred in the line of duty, is unable to comply with the foregoing requirements, his detail to duty involving flying shall be considered as temporarily suspended from the day following that on which the disability occurred; if the flight requirements are subsequently met within the three months' period herein prescribed, the temporary suspension shall be considered nullified, otherwise it shall remain in effect until he resumes flights in conformity with the foregoing requirements. Each officer, warrant officer or enlisted man, who is detailed to duty involving flying, and who is a qualified aircraft pilot, and who is fit for duty as such, shall make the flights herein required as pilot. Each officer, warrant officer, or enlisted man who is detailed to duty involving flying and who is a qualified aircraft observer, but is not a qualified aircraft pilot, shall make the flights, herein required as observer.

10. A commanding officer shall suspend from flying any officer, warrant officer, or enlisted man under his command, who, in his opinion, is unfit for flying for any reason other than sickness or injury. Such action shall be reported, with the reasons therefor, for confirmation to the authority who issued to such officer, warrant officer, or enlisted man his detail to duty involving flying. The confirmation of such action shall have the effect of suspending the detail to duty involving flying of the officer, warrant officer or enlisted man, concerned from the date such suspension from flying was made. When any officer, warrant officer or enlisted man, so suspended from flying becomes in the opinion of his commanding officer, again fit for flying, the commanding officer shall revoke his suspension from flying and such action shall be reported, with reasons therefor, for confirmation to the authority who confirmed the suspension from flying; the confirmation of such revocation shall have the effect of terminating the suspension of the officer, warrant officer, or enlisted man concerned from his detail to duty involving flying, from the date the suspension from flying was revoked by the commanding officer.

11. When traveling by air on duty without troops, under competent orders, actual and necessary expenses, not to exceed $8.00 per day, shall be paid to officers, contract surgeons, warrant officers, and enlisted men of the Army, Navy, Marine Corps, and Coast Guard.

Trade Notes

Responding to an urgent call from General Motors Limited, of Canada, Oshawa, Ont., for steering wheels which the Dayton Wright Co. have on order for the above company, the Dayton Wright Cruiser No. 4 left Dayton at 7 a. m., July 24, B. L. Whelan piloting, with a quantity of steering wheels. The Delco company also included in this shipment a number of automobile switches, an item which was also holding production of the General Motors of Canada. The plane arrived in Oshawa before noon. Accompanying B. L. Whelan was a student of the Dayton Wright Flying School. This sort of practical experience in cross-country flying is included in the course which this school offers. The Dayton Wright Cruiser No. 4 has now flown approximately 200,000 miles without mishap. It is equipped with one 400 hp. Liberty Twelve engine. Our cover illustration shows the machine taking on her cargo for the flight to Canada.

The A4, one of the oldest airships in the Army Air Service, recently made a successful 16 hr. flight from Langley Field, Va., to Akron, Ohio, where she landed with 90 gal. of gasoline still in her tanks. A four-day stop was made at the Wingfoot Lake Air Station of the Goodyear company for the fitting of the ship with mooring harness, after which the A4 left Akron for Scott Field, Ill., via Moundsville, W. Va., and Dayton, Ohio. It will be moored to a mast at Scott Field, where the new hangars, 800 ft. long, now being built will be the largest in the country. The A4 is just about half as large as present day airships being built for the services by Goodyear, and it speaks well for its endurance that it has taken this trip without mishap after more than three years of service.

The Goodyear company shipped this week the first towing airship to be built for the Army. It is 94 ft. long, with a diameter of 31 ft. and has a high speed of 50 m.p.h. and a cruising radius of 650 miles. Its gas capacity is 43,000 cu. ft. The towing airship is a development of the kite balloon and can either be towed or travel under its own power. Its motorization effects a considerable saving of ground personnel, a very important feature in military operations.

Information Wanted

L. Raecke, 136 W. 80th St., New York City, wishes to communicate with Harold Kantner, the aviator, or obtain information as to his whereabouts. Mr. Raecke has in storage at Hempstead, L. I., two airplanes built by Mr. Kantner and belonging to him which he has not yet claimed.

Raymond Hanes, R. F. D. 10, Xenia, Ohio, wishes information regarding a "Hendrickson single-seater monoplane equipped with an 80 hp. Le Rhône engine, which was used as a scout ship during the war." Mr. Hanes states that he recently purchased a brand new "Hendrickson" fuselage from the Johnson Airplane & Supply Co. and as this firm do not possess blueprints for the complete machine, Mr. Hanes is desirous of getting in touch with someone who could furnish him with the same. Neither the records of AVIATION or of "All the World's Aircraft" for the last five years shows the existence of any Hendrickson airplane. It is possible that the machine referred to is a Heinrich airplane, several of which were built some years ago at Mineola, L. I. If Albert Heinrich can be reached, he may perhaps want to communicate with Mr. Hanes.

WAR DEPARTMENT

AUGUST

Aug. 18—Q. M. SUPPLIES — Charleston, S. C., Auction. For catalog write Q. M. S. O., Candler Warehouse, Atlanta, Ga.

Aug. 22—Q. M. SUPPLIES — New Orleans, La., Auction. For catalog write Q. M. S. O., Candler Warehouse, Atlanta, Ga.

Aug. 24—AIR SERVICE SUPPLIES — Park Field, Tenn., Auction. For catalog write Commanding Officer, Park Field, Millington, Tenn.

Aug. 29—AIR SERVICE SUPPLIES—Americus, Ga., Auction. For catalog write C. O., Air Intermed. Depot, Americus, Ga.

Aug. 31—Q. M. SUPPLIES — Camp Funston, Kan., Auction. For catalog write Q. M. S. O., 1819 W. Pershing Rd., Chicago, Ill.

SEPTEMBER

Sept. 6—ORDNANCE SUPPLIES—Rochester, N. Y., Auction. For catalog write Chairman, Phila. Dist. Ord. Salvage Board, Phila., Pa.

Sept. 12—Q. M. SUPPLIES — Camp McClellan, Ala., Auction. For catalog write Q. M. S. O., Candler Warehouse, Atlanta, Ga.

Sept. 15—Q. M. SUPPLIES — Camp Meade, Md., Auction. For catalog write Q. M. S. O., 1st Ave. & 59th St., Brooklyn, N. Y.

Sept. 19—Q. M. SUPPLIES — Camp Lewis, Wash., Auction. For catalog write Q. M. S. O., Ft. Mason, San Francisco, Calif.

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SELLING PROGRAM

SEPTEMBER

Sept. 19—ORDNANCE SUPPLIES — Erie, Pa., Auction. For catalog write Chairman, Phila. Dist. Ord. Salvage Board, Phila. Pa.

Sept. 21—Q. M. SUPPLIES — Omaha, Neb., Auction. For catalog write Q. M. S. O., 1819 W. Pershing Rd., Chicago, Ill.

*Sept. 22—AIR SERVICE SUPPLIES–Houston, Tex., Auction. For catalog write C. O., Aviation Gen'l. Supply Depot, Houston, Tex.

Sept. 26—Q. M. SUPPLIES — New Orleans, La. Auction. For catalog write Q. M. S. O,, Candler Warehouse, Atlanta, Ga.

Sept. 28—Q. M. SUPPLIES — Camp Devens, Mass., Auction. For catalog write C. O., Boston Gen'l. Intermed. Depot, Boston, Mass.

Sept. 29—Q. M. SUPPLIES — Norfolk, Va., Auction. For catalog write Q. M. S. O., 1st Ave. & 59th St., Brooklyn, N. Y.

OCTOBER

*Oct. 5—ORDNANCE SUPPLIES — Chicago, Ill., Auction. For catalog write Chairman, Chicago Dist. Ord. Salvage Board, Chicago, Ill.

*Oct. 10—AIR SERVICE SUPPLIES — Dorr Field, Fla., Auction. For catalog write Commanding Officer, Dorr Field, Fla.

*Oct. 10—AIR SERVICE SUPPLIES — Carlstrom Field, Fla., Auction. For catalog write Commanding Officer, Carlstrom Field, Fla.

*Sales dates indicated by the asterisk are as yet only tentative.

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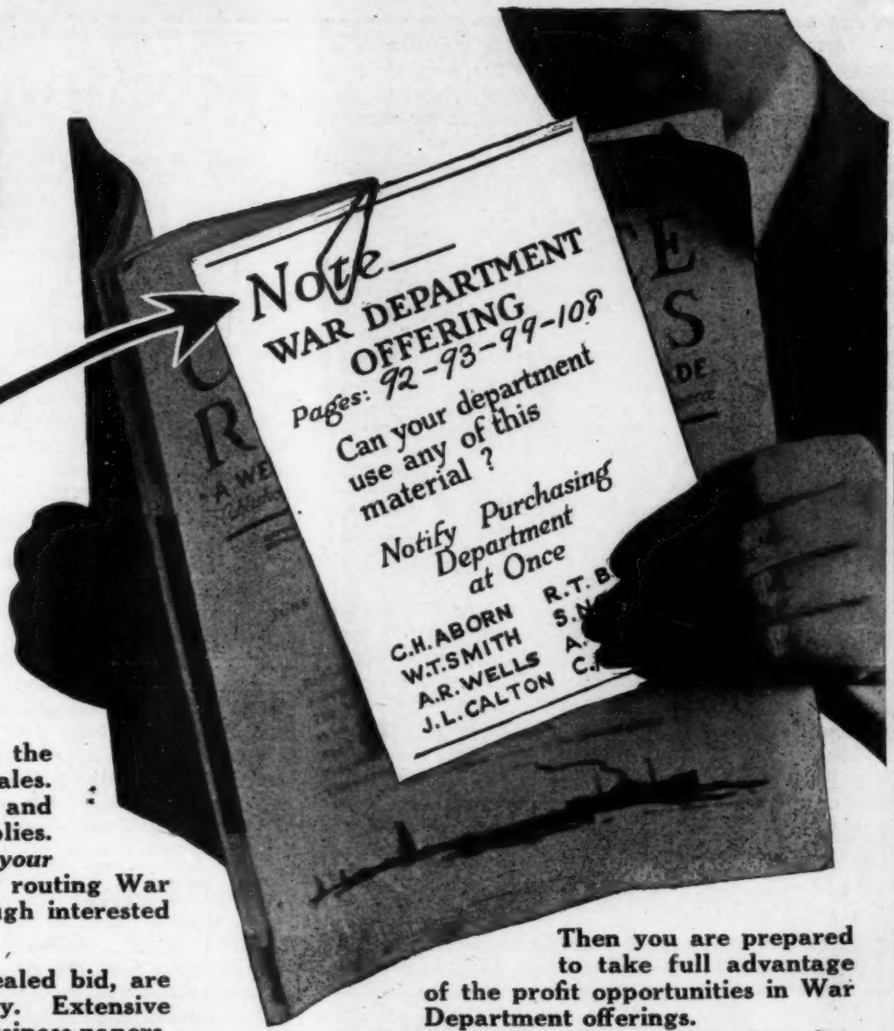

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RTMENT

2600 Government Planes Needed

Army and Navy Officials Plan Aeronautic Building Program Extending Several Years

That the Army and Navy realize that close cooperation is necessary to insure the maximum air defense is indicated by a report that is making the rounds of the departments in Washington.

Working separately, but with a coordinate plan of aerial national defense in mind, the aviation experts of the Army and Navy have under consideration plans for adequate aviation equipment totaling approximately 2600 airplanes, with proportionate personnel to protect the nation in the event of war. The scheme is not at present, one for a combined aerial service, but is twofold, being worked out in comprehensive detail, one by the Naval Bureau of Aeronautics for sea duty, and the other by the Air Service of the Army for land operation.

Primarily the Bureau of Aeronautics requires about 300 new airplanes, for use on the two aircraft carriers to be rebuilt from discarded battle cruisers, and approximately 300 more planes for assignment to battleships, cruisers and certain auxiliary war craft. These aircraft are to be operated by the new catapults and, when possible, landed with the aid of the arresting and brakeing devices just perfected. The production of the recently-developed all-metal torpedo plane is also planned in large numbers.

In the Army, Air Service officers look forward to provisions which will enable them to keep 500 planes on each coast, and about 1000 machines at interior strategic points. Regarding personnel, the Army desires a detail of about 2500 officers and 40,000 men in its future aerial force.

Both Naval and Military aviation officers urge the systematic development of landing fields and ports at both coastal and interior cities, particularly along definite aerial coastal and cross-country routes, with selected emergency fields.

Realizing that insistence on their part to effect these plans immediately would meet with opposition and probable refusal when an economically inclined Congress considered the estimates running into many millions, the proponents of the plans are hoping for a gradual development and completion within a few years. They nevertheless indicate that a single first-class battleship costs about $40,000,000, and insist that it is vitally necessary to national defense to develop aviation to its fullest possibilities regardless of initial expense.

While the plans have not reached the Departmental Secretaries as yet, they are practically complete, and may serve as the basis of their Departmental building programs to be outlined to Congress, somewhat after the Navy's building program of 1916, running over several years. It would take time to build 2600 new aircraft and the money required could not be expected in one or two annual appropriation acts.

Naval officers aim toward adequate aerial equipment for a well-rounded navy, and of course do not seek to eliminate the fleet or any part of it. Eventually, they want as efficient and complete a service in the air however as on the sea. Today, the Navy has approximately 312 service planes, and 233 training planes. During the recent congressional hearings Admiral Moffett asked for 213 new planes of different types for equipping naval war craft—for use "afloat," he put it—at that time making no demand for other aircraft except for the completion of the ZR1. The Navy is also insistent in its demands for the completion of its new aircraft carriers.

Officers of the Army Air Service believe about 2000 planes with adequate men to maintain and operate them are necessary to the safety of the country, pointing out that the aerial forces would form the first line of defense in a land attack. Today the Army has but 600 planes, some of them training planes, and about 400 planes building and in storage which might be pressed into service, if necessary, after being overhauled. Eventually, they want double the total or two thousand efficient planes and more than double the officers and men in the service at this time. The Secretary of War it is said, knows that the Air Service lacks men and funds, but is not intending to cripple the other branches of the Army nor take from their proportional financial allotments at this time. Nevertheless, it is felt by high Air Service Officers that a gradual and practical building up of the military air service is not only practical but essential in keeping up with the military progress of other nations, especially since the reported plan of England to build 500 military planes.

Aviation and West Point

A letter received by AVIATION from the Brig. Gen. Fred W. Sladen, Superintendent of the United States Military Academy at West Point gives the present status of aviation at West Point.

Of the 131 Cadets who graduated on June 13, 1922, there were nineteen assigned to the Air Service. The remainder were assigned as follows: Engineers, 8; Signal Corps, 4; Infantry, 51; Cavalry, 12; Field Artillery, 23; Coast Artillery, 14. These numbers correspond very approximately to the first choice of those who graduated, though not exactly on account of several factors, including a number of vacancies existing in each branch of the Service.

Aviation does not play a very great part in the curriculum, for the reason that the policy of this institution is not to turn out a graduate highly specialized in any one branch of the service, but to give to the Army a young officer with a basic knowledge of all branches. The specilization in the branch which he chooses follows his graduation.

For the past two years, the practical work in aviation has been limited to one fifteen-minute flight in an airplane and one fifteen-minute flight in an airship.

Academic instruction in the general subject of aviation is taken up in the Second Class or Junior Year after the completion of instruction in General Physics, Advanced or Technical Mechanics, and Hydraulics. The basic instruction is given in the Department of Natural and Experimental Philosophy and covers the following phases of the subject of aerodynamics: Sustenation; Relations in Flight; Resistance; Thrust Required; Power Required; Power Available from Air Propeller and the Airplane Engine; Relation between Power required and Power Available; Climbing and Gliding; Airplane Performance at Different Altitudes; Single and Multiple Planes, Longitudinal Stability; Directional Stability.

This instruction is conducted in the usual way by assigning lessons, requiring recitations thereon, by conferences, by lectures; by consideration of special articles in current aviation periodicals, in Air Service Information Bulletin, Reports of the Advisory Board on Aeronautics, and in reference books available in the department. Suitable problems in aerodynamics are assigned and solved in the Section Room. A portion of the academic instruction is conducted at an airplane where practical application of principles learned in the purely theoretical work is pointed out and emphasized. Full use is made of lantern slides and motion films.

Academic instruction is likewise given on the internal combustion motor, including accessories thereto, in the Department of Electricity. This department also gives instruction in the various systems of communication used in connection with the Air Service. The Department of Ordnance and Gunnery covers the subjects of armament, guns and mounts, and ammunition as well as such devices as bomb releases, synchronizing gears, and sighting devices. In the Department of Civil and Military Engineering under the subject of Military Art, Organizations and Equipment, Powers and Limitations, Functions, Relations to the Other Arms, and Strategy of the Air Service are handled by recitations and lectures.

Landing Field Information

Notice to Aviators No. 6 (1922)

New York

East River—College Point, L. I. Aviation Light—The 14-in. high-power searchlight recently established at College Point as an aid to aviators coming into New York and Flushing Bay after dark will be exhibited from sunset to midnight every night from May 15 until further notice—probably until Nov. 15, 1922.

The light is a *fixed white* beam projected at an elevation of 60° due north (360°) across the Sound. Instructions will be issued to the watchman in charge to man the searchlight upon the approach of a machine and throw the beam into the wind, taking care not to blind the pilot.

After the machine has reached the water in safety the beam will be thrown onto the most convenient vacant mooring. This will materially assist the pilot as it is probable that certain of the moorings will be occupied. The watchman will then go out and take over the machine for the night and land the crew.

Approximate position of College Point Station, latitude 40° 47′ 15″ N., longitude 73° 51′ 20″ W.

(See Notice to Aviators 5 (37) of 1922.)

New Jersey

The following landing fields in New Jersey have been reported by G. Raymond Richman, of Camden, N. J.:

Gloucester.—Good level landing field for ships of all types eastward of Gloucester. The field is 300 ft. by 2,700 ft. and lies along the Mount Ephraim Pike, and on the Nicholson Road, 3 miles from the Market Street Ferry at Camden.

The field is marked with a circle and arrow, the head of the arrow indicating magnetic north, and has straight away and cross take-offs, with grass runways, which are kept in good condition.

Gas and oil are available.

There is a bus line to the ferries with a 10-minute service.

Approximate position: Latitude 39° 53′ 30″ N., longitude 75° 06′ 30″ W.

Millville.—Coombs Farm, one mile northeast of town. There is always one of four large fields available, as one is always used as a pasture.

Good for all types of ships.

Approximate position: 39° 25′ N., 75° 02′ W.

Salem.—Beacon Farm, one mile southeast of town; distinguished by large buildings; always a large pasture available.

Approximate position: 39° 34′ N., 75° 27′ W.

Bridgeton.—Old race tracks, one mile southwest of town. DH's can land here, but *all* should keep a sharp lookout for horses which are left to pasture on the field.

Approximate position: 39° 25′ N., 75° 15′ W.

Note.—Mr. Richman states that he has used all of the above fields for passenger carrying and that they are all level and without ditches.

Maryland

College Park.—Information has been received from the General Superintendent, Post Office Department, that the landing field at College Park, Maryland, has been vacated by the Air Mail Service and that supplies and accommodations, except perhaps hangars, are no longer available.

(See Notice to Aviators 1 (1) and 5 (36, page 101) of 1922.)

District of Columbia

Anacostia Naval Air Station—An airplane speed-trial course has been established in the Potomac River near Anacostia.

This speed-trial course has a length of 11,950.8 ft. between the two terminal points, which are in the following positions:

Northern end: 38° 50′ 45″ .8 N., 77° 01′ 19″ .2 W.

Southern end: 38° 48′ 50″ .7 N., 77° 01′ 53″ .4 W.

U. S. Coast Survey Chart 560.

Florida

Pensacola Naval Air Station—The beacons recently established at the Pensacola Naval Air Station, East Bay, are located as follows:

Beacon A, about 1,250 yd. 98° from White Point Light.

Beacon B, about 1.3 miles 133° 30′ from East Bay Channel Range Rear Light.

Beacon C, about 3.6 miles 71° from White Point Light.

Approximate position of White Point Light, latitude 30° 26′ 00″ N., longitude 87° 02′ 30″ W.

(See Notice to Aviators 3 (27) of 1922.)

(Notice to Mariners 8 (559), Lighthouse Service, Washington, 1922.)

U. S. Coast Survey Chart 186.

England's Latest Bomber

Close-up of the Avro "Aldershot" (650 hp. Rolls Royce "Condor")—a new high speed day-bomber of the British Air Force

Canadian Aviation Statistics

The latest progress report issued by the Canadian Air Board gives the following data on civil aviation certificates and licenses in force on June 30, 1922:

Private air pilots, 43.
Commercial air pilots, 53.
Air (ground) engineers, 196.
Air navigators, nil.
Airship officer pilots, 1.
Civil aviation machines, 54.
Civil government machines, 34.
Canadian Air Force machines, 62.
Civil aviation airharbors, 25.
Civil government airharbors, 6.
Canadian Air Force airharbors, 1.

The following changes have occurred in airharbor licenses since the last information published in AVIATION:

Airharbor license No. 5 ,issued May 7, 1920, to May-Gorman Aero Ltd., Edmonton, Alberta, for a commercial airharbor under 300 yd. situated on St. Albert's Trail, 3½ miles N.W of Edmonton P. O. has been cancelled and is superseded by license No. 50, issued May 2, 1922, to Neilson Bros., 443 Tegler Bldg., Edmonton, Alta., for the same airharbor.

Airharbor license No. 52 was issued June 26, 1922, to W. P. C. MacDonald, Wapella, Sask., for a commercial airharbor under 300 yd. situated 8 miles S. of Wapella, Sask., on Moosemin-St. Andrew's Road.

Preparing for the Night Air Mail

With a view to preparing the way for night flying in the Air Mail Service the Post Office Department is interested in obtaining suitable landing fields, practical and efficient aerial lighthouses, proper equipment for airplane and proper airdrome equipment. It is believed that for night landing, a four-way field is most essential. Emergency landing fields should be located every 25 miles along the route. It is proposed that municipalities provide these fields.

The Army Engineering Division at McCook Field is cooperating with the Air Mail Service in analyzing the need for proper night flying and the character of equipment necessary.

Relative to aerial lighthouses, the problem is to provide a light that can be seen for a distance of 25 miles when flying at any reasonable altitude. It is said this can be accomplished. The two best possibilities being considered are, first, the automatic acetylene gas operated type, manufactured by the American Gas Accumulator Co. of Elizabeth, N. J., and, second, the incandescent searchlight. The acetylene type is familiar in marine lighting. It has also been used successfully at the Croydon Airdrome in England. It can be seen for 30 miles and can be equipped for twelve months' unattended operation. It is not affected by electrical storms and should prove very dependable. The National Lamp Works of the General Electric Co. at Cleveland, Ohio, is making a study of the requirements for a powerful incandescent searchlight.

The planes used for night flying will be equipped with electric landing lights, located in the wing tip, foot parachute flares developed at McCook Field, also non-glow exhaust manifold and the propellers will be finished dull, so as to prevent reflected lights from shining in the pilots' eyes. The planes will also have navigation lights, red and green. These lights will be placed on the ship so that they will not disturb the pilot.

It is proposed to light the airdromes with first, a beacon, to be visible for at least 25 miles; second, "bounding lights," that is, low powered lights strung around to outline the field limits; third, illuminated weather vane; fourth, obstacle lights; fifth, building flood lights to give buildings daytime prospective; sixth, field landing lights, powerful incandescent flood lights to show where to set the wheels when making a landing. The Army Air Service has done considerable reseach work on night flying at McCook Field and the Air Mail will benefit by this development.

Experiments in night flying by the Air Mail Service will be started this week at the McCook Field, Dayton, Ohio, to supplement tests being made in radio communication at Bolling Field, Washington.

A mail airplane has been ordered transferred from the Chicago station to Dayton where the experiments will be pushed ahead rapidly. Under the direction of Army experts in night-flying, this plane will be provided with search lights and other necessary equipment for flying in darkness after which actual flights at night will be made.

Non-Spinnable Airplanes

Editor, AVIATION:

I notice in AVIATION an article commenting upon the fact that a certain plane tested at McCook Field could not be spun, and that it was the first machine with such a characteristic.

I wish to call your attention to the Morane-Saulnier "AR" curved wing training plane equipped with an 80 hp. LeRhone motor, will not spin, as verified by Lieutenants Wade and Niedermeyer at McCook Field, and Commander Chevalier, and many of the pilots attached to the Naval Air Station at Hampton Roads, Va.

It might be of interest to tell you that this machine was produced, and flown by myself in 1919.

TEMPLE N. JOYCE
Baltimore, Md.

The Round-the-World Flight

Maj. W. T. Blake, Lt. Col. L. E. Broome and Capt. Norman MacMillan, who left England May 22, arrived on Aug.5 at Delhi, British India.

When they started on their long trip, the three airmen estimated they could complete their round-the-world flight in ninety days, but with the lapse of more than half of this time they have managed to reach only about 5000 miles from their start.

Four planes—two land machines and two seaplanes—are to be used in the expedition. The itinerary worked out, with the planes to be used, is as follows:

DH9 Airplane

Lap—	Miles
London-Paris, Rome	900
Athens	570
Crete-Alexandria	640
Bagdad	840
Bazra-Bunder Abbas	850
Karachi	600
Delhi	700
Alahabad-Calcutta	840
Total	5940

Fairey F3 Seaplane

Akyab-Rangoon	600
Bangkok, Saigon	780
Hainan-Hongkong	1000
Shanghai	750
Nagasaki-Yokohama	1050
Kurile Is-Petroplavsk	1560
Komandorski Is., Dutch Harbor	1380
Kodiak Is., Sitka	1260
Prince Rupert-Victoria	800
Total	9180

DH9 Airplane

Calgary-Winnipeg	1100
St. Paul-Chicago	660
Pittsburg-New York	780
Boston-Halifax	600
Newfoundland	540
Total	3680

F5 Flying Boat

Belle Is., Cape Farewell	1260
Reykjavik	1020
Faroe Is.	450
Scotland-London	780
Total	3510
Grand Total	22,310

Second National Aero Congress

Simultaneously with the Pulitzer Trophy and other overland races which the Detroit Aviation Society will hold Oct. 12-14 at Selfridge Field, will be held the Second National Aero Congress, taking up the work begun at the first congress in Omaha in November, 1921. At the Detroit Convention delegations from everywhere in the United States will organize a permanent body which will have a title identifying it as a national body the purpose of which is to encourage and help develop civil and commercial aviation. It shall be non-political, and non-Governmental, except where it can be of assistance to the various Federal aviation services.

More than sixty cities are already represented on the original committee of 500 now organizing air boards. These air boards are advisory in character and designed to develop aviation in communities and states. They will send delegations to the national convention.

A tentative constitution and by-laws have been drafted to be adopted at the Detroit Convention.

ARMY AND NAVY AIR NEWS

Air Service

Fliers Visit Colorado Springs, Colo.—A visit of ten DH4's was recently paid Colorado Springs, Colo., where the headquarters of the 103rd Division, Air Service, is located. The flyers were from Fort Sill, Okla., and consisted mostly of students on a practice cross-country flight. All planes landed safely except the one piloted by Lieut. Stackhouse, who hit an old road bed that threw him over on his back, washing out the ship completely except for the motor and a few spare parts. The pilot and observer did not sustain as much as a scratch, to the surprise of the crowd of civilian onlookers.

A reception committee from the Colorado Springs Chamber of Commerce, with the Executive Officer of the 103rd Division, Air Service, met the flyers at Kelder Field, a large crowd being present to watch the ships land, among them the noted aviatrix, Miss Ruth Law. It is estimated that 5,000 people visited the field in the afternoon to see the planes and watch the flyers take off. A sport dinner dance was given at the Broadmoor in the evening in honor of the aerial visitors, and it was well attended by the leading citizens of the city. The officers expressed themselves as having a wonderful time.

* * *

Massachusetts Reserve Squadron—The officer personnel of the 319th Squadron (Obs.), 94th Division, Organized Reserves (Massachusetts), is practically complete. The activities of the Squadron have been more or less hampered to date through lack of an airdrome and equipment. These obstacles, however, are soon to be overcome by the construction of the airdrome at East Boston which has recently been authorized by the Legislature. Bids for levelling the field, erecting hangars, etc, have been requested, and it is hoped that flying may be commenced by November 1. Until the completion of this field, it is planned to utilize such planes and equipment as are available at the existing field at Framingham, Mass., but this airdrome is not adapted to extensive dual or solo work.

The squadron is in command of Maj. Arthur L. Richmond, and numbers among other officers Captains Morris E. Knight and T. F. Joyce, and 1st Lieuts. Chester E. Wright, David Gregg, John Lavelle and Theodore Hedlund. A great many more officers have applied for assignment than can be taken care of at present.

* * *

National Guard Aero Squadron Receives Flag—Formal presentation of the flag, given by the Andrew Jackson Society to the 136th Aero Squadron, was made at Blackwood Field, Nashville, Tenn., on June 18. The Hon. Clyde Shropshire, former Speaker of the House of Representatives, made the presentation speech.

Dr. W. F. Powell, pastor of the First Baptist Church, pronounced the invocation and as the band played the "Star Spangled Banner," Miss Bettie Hooper Turner unfurled the flag. Adjutant General Philip I. Brumit, Col. William Newman, Col. Allen, Maj. J. C. Bennett, Lieut. Vincent Meloy and other officers then reviewed the troops as they passed in battalion review. The units taking part in the demonstration were the 136th Aero Squadron, Company F of the 117th Infantry and the Service Company of that regiment, together with the band.

Following the presentation ceremonies, Lieutenant Meloy and Major Bennett, Capt. Duncan Potter and Capt. M. H. Dobson, Jr., and Lieuts. Herbert Fox and Charles Blanchard gave a number of exhibition flights.

Army Orders—Capt. Harold E. Sturcken, A.S., relieved from further training at Langley Field, Va., is assigned to Brooks Field, Tex., for duty.

Capt. Eugene Lazar, A.S., relieved from duty at the Curtiss Elmwood Air Service Depot, Buffalo, N. Y., is assigned to Scott Field, Ill., for duty.

Maj. Frank D. Lackland, A.S., relieved from duty at the air office, Hdq. 8th Corps Area, Ft. Sam Houston, Tex., is assigned to take command of the San Antonio Air Intermediate Depot, Tex.

First Lieut. Clarence H. Schabaker, A. S., relieved from temp. duty at Post Field, Okla., and at Carlstrom Field, Fla., is assigned to Bolling Field, D. C., for duty after completion of temp duty with summer training camps in the 6th Corps Area.

First Lieut. Raymond Mooney, A.S., has been honorably discharged from the service of the United States, to take effect at Walter Reed Hospital, Washington, D. C.

Maj. Norman W. Peck, A.S., relieved from duty at Camp Eustis, Va., is assigned to the Goodyear Tire & Rubber Co., Akron, Ohio, for duty as chief inspector for the Engineering Division, Air Service.

Capt. Christopher W. Ford, A.S., relieved from duty at Brooks Field, Tex., is assigned to Langley Field, Va., for duty and training in the Field Officers' School.

First Lieut. George G. Lundberg, A.S., relieved from duty at Fort Omaha, Neb., is assigned to Scott Field, Ill., for duty and training as airship pilot in the Balloon and Airship School.

First Lieut. Omer O. Niegarth, A.S., relieved from duty in the office, C.A.S., is assigned to Fairfield Air Intermediate Depot, Ohio, for duty.

First Lieut. Emile T. Kennedy, A.S., relieved from his present duty at Scott Field, Ill., is assigned to duty at the same station for training as balloon observer in the Balloon and Airship School.

First Lieut. Edwin A. Russell, A.S., relieved from further treatment at Walter Reed General, will return to his proper station, Fairfield Air Intermediate Depot, Ohio.

First Lieut. Lloyd Barnett, A.S., relieved at his own request from duty at Montgomery Air Intermediate Depot, Ala., is assigned to Crissy Field, Calif., for duty.

First Lieut. Martinus Stenseth, A.S., relieved from duty at Kelly Field, Tex., is detailed for duty with the Organized Reserves of the 7th Corps Area, Omaha, Neb.

The transfer of First Lieut. Donald Frank Stace, C.A.C., Mount Clemens, Mich., to the Air Service with rank from July 2, 1920, is announced.

Maj. Charles C. Benedict, A.S., is relieved from his present duty as assistant military attache, London, England.

* * *

Fine Cross-Country Flight—A fine long distance cross-country flight was made June 20-21 by Lieut. Delmar H. Dunton, of Kelly Field, when he flew to Selfridge Field, Mt. Clemmens, Mich., a journey of 1,350 miles, in 15 hr. 5 min. Lieutenant Dunton's average flying time was 103 m.p.h. The route followed was via Dallas, Tulsa, Belleville, Ill., and Selfridge Field. One stop was made at Belleville, where Scott Field is located, for rest and replenishing gas and oil.

Lieutenant Dunton's trip was made for the purpose of studying air currents and securing information to be used by Army aviators in other long cross-country trips. The type of plane used by Lieutenant Dunton was the regulation DH4B, with a larger gas tank. The tank capacity was 110 gal., as against the ordinary 80 gal.

Death Notices—The following death notices of officers of the Air Service are announced by the Adjutant General's Office:

JOHN P. ROULLOT

Born in Pa., Jan. 25, 1894. Appointed from Calif. Pvt. 1st cl. Av.Sec. Sig.ERC, May 25, 1917 to Jan. 16, 1918; 1st Lt. Avia. Sec. Sig. ORC, Jan. 16, 1918; Accepted, Jan. 17, 1918; Vacated, Sept. 17, 1920; 1st Lt. AS, July 1, 1920; Accepted, Sept. 17, 1920.

Service—On duty with school of Aerial Observers, Ft. Sill, Okla., from Oct. 25, 1917, to Feb. 8, 1918; at Aviation Concentration Camp Dallas, Tex., to Apr. 4, 1918; at Selfridge Field, Mt. Clemens, Mich., to June 3, 1918; at Garden City, N. Y., to July 11,1918; with Officer in Charge Aircraft Production, Detroit, Mich., to Sept. 19, 1918; at Roosevelt Field and Brindley Field to Jan 16, 1919; at Mitchel Field, and Lufberry Field to April 3, 1919; at Hazelhurst Field, N. Y., to Nov. 15, 1919; at Mitchel Field, N. Y., to Feb. 7, 1922; enroute to Canal Zone and on duty at France Field, C. Z., returning to the U. S. June 26, 1922; at Mitchel Field, L. I., N. Y., to date of death. He died July 20, 1922, death caused by pistol shot, accidental, result of wound incurred in line of duty.

ROBERT H. V. STACKHOUSE

Born in Pa., Aug. 30, 1897. Appointed from Pa. Cadet MA, June 14, 1917 to June 27, 1918; Cadet MA, Aug. 31, 1918; 2nd Lt. CAC, July 2, 1920; 1st. Lt., July 2, 1920; Detailed in A.S., Aug. 12, 1921; Graduate CAC School, Basic Course, 1921; Graduate Air Service Pilot School, 1921.

Service—On duty at Ft. Monroe, Va., from Sept. 15, 1920, to Aug. 12, 1921; enroute to and at Carlstrom Field, Fla., under instruction there and at Post Field, Ft. Sill, Okla., to July 5, 1922; at Chanute Field, Ill., on duty with 15th Squadron (Obs.) to date of death. He was killed in airplane accident at Rantoul, Ill., July 27, 1922.

* * *

Changes in Stations of Air Service Formations—The following changes in stations of Air Service formations are announced by the Adjutant General's Office under July 24, 1922:

The 44th Squadron (Obs.) is organized at Post Field, Okla.

The 10th Group Hdq. (School), the 39th, 40th, 41st, 42nd and 43d Squadrons (School), Photo Section No. 22 and Air Park No. 13 are organized at Kelly Field, Tex.

The 9th, 19th and 28th Aero Squadrons are made inactive, and the 14th Aero Squadron is demobilized.

Naval Aviation

Preparations for Mimic Air Battles—The Hampton Roads Naval Air Station is the scene of great activity at the present time in preparation for the mimic battle to be staged off the Virginia coast the middle of August between the battlesheep fleet and the Air Forces.

The maneuvers between the Fleet and the Naval Air Squadrons will be first of their kind to be carried out on such a comprehensive scale and will represent accurately conditions to be met in naval engagements of the future. The battle between the naval planes and the fleet will take place about 50 miles off the Virginia Capes, and will work out problems in which scouting planes and torpedo planes are pitted against a modern fleet.

The present work of the air forces is in line with the coming maneuvers. The planes take the air daily in practice flights to work out formation problems of attack against the battleships. In the forthcoming mimic battle the fleet will be somewhere at sea off the Virginia Capes when the problem starts. Scouting planes will leave the Air Station at Hampton Roads and search for the battleships. When their position has been determined by the scouts, the information will be conveyed to the torpedo plane squadrons and these will advance to the attack. The ships will probably be located by scouts when they are about 50 miles at sea, and the torpedo planes will leave in squadron formation, each plane carrying a torpedo slung to its underbody. As the torpedo planes approach the line of the battle fleet, they will be controlled in their movements by the division commanders of the torpedo squadron who fly at the head of their division of planes and lead the formation in to the attack. When the planes are within range of the ships, at a given signal each plane will launch a torpedo and swoop upward and away out of range of the guns of the battleships.

The maneuvers will demonstrate the utility of various types of aircraft used as an arm of the battle fleet in action. Naval aircraft have brought new problems of tactics and strategy into fleet operations. The large scouting planes are invaluable aids in locating the position of an enemy, determining his strength and formation, and giving other valuable service of information to the commander-in-chief; combat planes capable of engaging with success any type of enemy aircraft and clearing the air of enemy planes are a vital requisite of present day naval operations; spotting planes with radio equipment hover over the scene of a naval engagement and direct with telling effect the fire of the capital ships; bombing planes carrying large quantities of explosives can make deadly attack once they get into position over the enemy ships, and torpedo planes are sent in to launch their weapons at the battleship formation with a speed more than three times as great as the fastest destroyers.

The air and fleet maneuvers this year are of necessity restricted to operations within flying distance of an air base. With the advent of the airplane carriers authorized by the Limitation of Armament Conference, and when the U.S.S. Langley is placed in the fleet after completion of experimental work, it is proposed to carry out air operations in conjunction with fleet maneuvers on a more comprehensive scale.

* * *

Air Squadrons, Atlantic Fleet—It will be remembered that some time ago the Air Squadrons, Pacific Fleet, adopted as their mascot a young sea lion who crawled into an F5L flying boat while it was moored off the California coast and made himself at home.

The Air Squadrons, Atlantic Fleet, now announce that they have adopted as their mascot a large size opossum.

When Lieut. J. C. Williams recently went out to the F5L seaplane of which he is the pilot, and which was anchored in Hampton Roads with the Fleet Air Force, he found the new mascot swinging contentedly from one of the brace wires of the large seaplane. An investigation developed that during the night the 'possum' had feasted sumptuously on the emergency rations carried in the plane. Finding ships' biscuit and beans suited to his gastronomic requirements he had decided on the seaplane as a permanent place of abode. Just how the possum had accomplished the feat of getting to the plane when it was anchored some distance off shore was at first mystifying. The only possible solution was that during the previous day he had made his way on board when the plane was on the beach and as a stowaway had taken a "hop" with the crew over Chesapeake Bay and had been left on board when the ship was anchored at night.

* * *

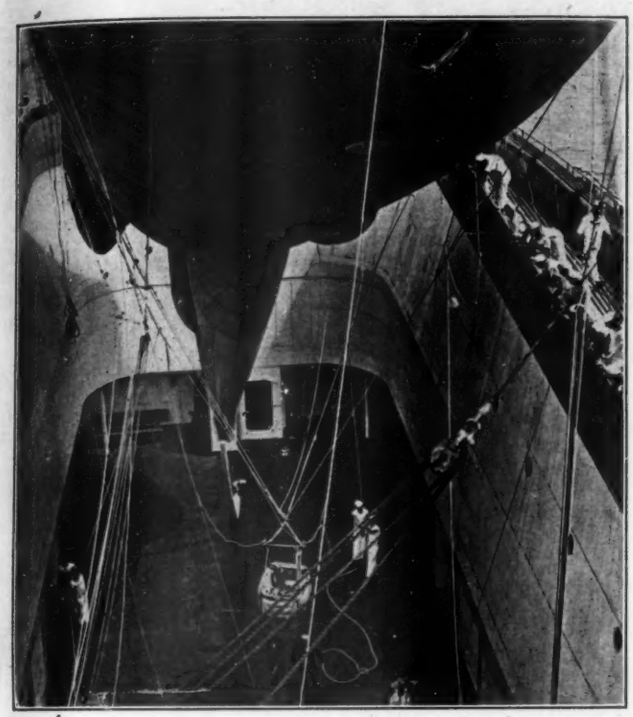
Air Squadrons, Pacific Fleet—Seaplanes of the Air Squadrons, Pacific Fleet, are used to carry mail between units of the fleet and the Commander-in-Chief. Important matters can thus be acted upon and returned in about one third the time required if regular mail were used.

During the past year this service has been maintained almost daily between San Diego and San Pedro (Los Angeles harbor) Calif. F5L Seaplanes, equipped with two Liberty engines are used. They carry a first pilot, a second pilot, a mechanic, and a radio operator, and seven passengers or less. These flying boats are fast becoming obsolete and worn out, and will be replaced by more efficient types of modern design in the near future.

Fog, wind and weather often delay or hinder, but rarely stop the seaplane mail. Forced landings sometimes occur, and repairs must of necessity be made at sea.

How the Navy Prepares for Aerial Combat—The following notes give an interesting insight into the manner in which the Navy prepares for aerial combat work:

When two patrols or flights of combat, pursuit or fighting airplanes meet in aerial warfare, they maneuver cautiously until actually engaged. Each flight endeavors to obtain a position above the other, in order that the attack may be made by diving. Surprise is a tremendous advantage, and hence a skilled leader will use the clouds or the blinding rays of the sun to conceal his approach. Diving to attack enables the higher planes to approach with greater speed, and hence to fire and then pull up out of range of the enemy's guns,



Official Photo, U. S. Navy

Looking into the balloon well of the U.S.S. Wright, aircraft tender of the Air Squadrons, Atlantic Fleet

ready for another dive. The lower planes have to pull up to bring their guns to bear and hence are in an unatural position, losing speed and very apt to lose control.

As the attack actually occurs, opposing planes become paired off, each pilot giving his undivided attention to his opponent. A superiority of one or more planes on either side is thus a tremendous asset, as it can readily slip in on an enemy plane unobserved. The ensuing melee is termed a "dog fight".

The opposing pilots fly by instinct, with eyes glued to their opponent. Each attempts to bring his guns to bear on the other without letting the other's guns bear. This is usually done by turning toward the tail of the opposing plane, or "chasing tails". Some pilots also attempt to approach on a "blind spot" or where the enemy's guns are obscured by a wing etc. Others will dive below the enemy with great speed and pull up vertically under him for a quick burst.

* * *

Fate of Rockaway Naval Air Station—In view of the possibility of keeping Rockaway Naval Air Station, Assistant Secretary Roosevelt has ordered Rear Admiral Vogelgesang, Commandant of the Third Naval District, to suspend his operations of abandoning the station. Following recent developments, the Commandant has been ordered to open negotiations with the Comptroller of the City of New York with a view of arriving at some basis whereby the Navy may continue to hold is station at Far Rockaway, the abandonment of which was about to be undertaken.

Training of Reserve Naval Aviators—Plans for the training of Naval Reserve Aviators on inactive duty have been formulated by the Navy Department in instructions just sent out by the Bureau of Navigation to all Commandants of Naval districts.

The instructions governing the training of aviators in the Naval Reserve designate the Atlantic and Pacific Fleet Air Squadrons and the Naval Air Station at San Diego, California, as the units which have charge of the training of the pilots. Reserve aviators residing in the Eastern Naval Districts can obtain orders for training duty with the Air Squadrons of the Atlantic Fleet by applying to the Commandants of their respective districts. Upon receipt of a request for training the Commandants of the districts are instructed to apply to the Bureau of Navigation for orders for the pilot. The Commandant of the 11th Naval District, with headquarters at San Diego, Calif., is authorized to make necessary arrangements with the Commandants of the 12th and 13th Naval Districts which embrace the West coast, for the training of aviators with the Pacific Fleet Air Squadrons and at the Naval Air Station at San Diego.

Aviators residing in the 9th Naval District, headquarters at Chicago, and in the Southern Naval Districts who make application for training will receive consideration from the Bureau of Navigation if transportation will be paid by the officers concerned. This is made necessary by the limited appropriation available for transportation in connection with training of reserves. The instructions sent out from Washington limit the training to commissioned officers who are aviators owing to the limited facilities for training and the training period is prescribed as fifteen days. It will be possible to provide training along these lines to twenty officers at the same time and this number will be divided as follows; Eight officers attached to the U.S.S. Wright with the Atlantic Fleet Air Forces, eight officers attached to the U.S.S. Aroostook with the Pacific Fleet Air Forces, and four officers to receive training at San Diego. The training classes will be maintained during the continuance of the orders in effect for an indefinite period, and every effort will be made to keep the class of twenty officers under training up to full strength.

The itinerary of the Atlantic Fleet Air Forces is announced to be August 7 to August 20 at Newport, R. I., August 21 to October 29 at Hampton Roads. The Pacific Fleet Air Forces will base on San Diego from July 1 to September 10.

Coming Aeronautical Events

AMERICAN

Date Postponed — *Aviation Meet, Aircraft Exhibition and Aeronautical Congress, Chicago.*

Oct. 7 — *Detroit Aerial Water Derby, Detroit. (Curtiss Marine Flying Trophy Competition.)*

Oct. 12-14 — *Detroit Aerial Derby, Detroit. (Pulitzer Trophy Race.)*

FOREIGN

August — *Coupe Jacques Schneider. (Seaplane speed race.) Naples, Italy.*

August — *Tyrrhenian Trophy. (International Seaplane Competition.) Naples, Italy.*

Aug. 6-20 — *Soaring and Gliding Competition, Clermont-Ferrand, France.*

Aug. 9-24 — *Soaring and Gliding Competition, Gersfeld, Germany.*

September — *Grand Prize of Italy. (International Airplane Competition.) Milan, Italy.*

Sept. 22 — *Coupe Henri Deutsch de la Meurthe. (Airplane speed race.) France.*
American elimination trials, if required, to be held about Aug. 15, at Mitchel Field, L. I.

October — *International Parachute Competition. Rome, Italy.*

Foreign News

France—Captain Madon, a famous French ace, is experimenting at Etampes with an extraordinary "tailless" airplane designed by M. Arnoux, and adapted for the practical purposes of flight by the airman.

This machine is said to do 180 m.p.h., and lands at a little over 30. The sporting newspaper *L'Auto* gives an account of the new machine in the words of Captain Madon himself, as follows:

"There is no fuselage and no stabilizer; there are two planes, a shell covers the pilot and the motor, and there are two rudders for steering, one on either side of the pilot. The machine is flown like an ordinary airplane. For altering direction upward or downward there are ailerons, or small wings, behind the two wings of the lower plane, and these act like an ordinary elevating rudder. For lateral equilibrium these same ailerons are used, one being turned up while the other remains stationary."

Captain Madon claims that the new machine cannot go into a spin and that it recovers lost speed with great promptitude. He made his first flight after a few weeks' work upon M. Arnoux's models, and now, after some more modifications in the machine, he intends to continue his experiments at Issy-les-Moulineaux. His first more extended flight will be Paris-Etampes-Villars Coublay-LeBouget-Paris, and if that is successful he will attempt a long flight from Paris to Nice.

* * *

Great Britain—That commercial airplanes, specially designed for civil exploitation and backed by a proper maintenance system, can compete in the matter of dependability with any other kind of public vehicle was recently demonstrated by the Daimler Airway Co. of London.

A DH34 11-passenger cabin plane (450 hp. Napier "Lion" engine) of this firm during six weeks carried out a double return journey between London and Paris each day except Sundays. The distance between London and Paris is 240 miles. While this performance was not made throughout with the same engine, it speaks well for the ruggedness of the DH34 that the particular machine in question has by now completed about 500 flying hours, or roughly 50,000 miles in a period of three months. If this number were multiplied by the number of passengers carried, it is obvious that a much more impressive number of "passenger-miles" would be obtained.

Col. Frank Searle, general manager of the Daimler Airway, who read in the past few years various papers pointing out that the high cost of operating airways was largely due to an insufficient utilization of the airplanes, necessitating the existence of a large idle fleet, has thus borne out his theories with a practical demonstration.

* * *

Spain—It is announced that the Spanish government has given its consent to the inauguration of an aerial postal service between France and Spain. An agreement is being drawn up between the Spanish government and the Latécoère company, which will undertake the transport of mails to and from Spain by utilizing the airplanes already plying on the Toulouse-Casablanca route, which land at Barcelona, Alicante and Malaga. It is also likely that an agreement will be made with regard to the transport of goods by air between France and Spain.

* * *

The Netherlands—The Belgian Aerial Navigation Co., ("SNETA") which for some time past has been conducting the aerial service between Amsterdam, Brussels and Paris, discontinued the operation of that line on June 1, and the service was taken over for operation by the Royal Aerial Navigation Co. of the Netherlands. This Amsterdam-Brussels service comprises a part of the Amsterdam-Paris service, the Brussels-Paris section of the line being operated by the Compagnie des Messageries Aériennes.

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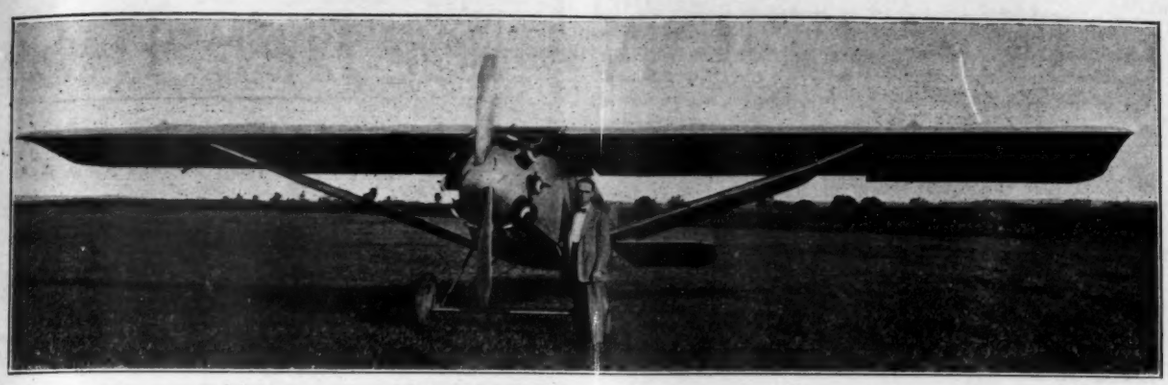

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INDEX TO ADVERTISERS

A

Aeromarine Engineering & Sales Co..... 175
Aircraft Service Directory..... 202

C

Classified Adv..... 200
Curtiss Exhibition Co..... 203

D

Dayton Wright Co..... 174
Diggins, The, Ralph C., Co..... 200

F

Ferdinand, L. W., & Co..... 198

G

Goodyear Tire & Rubber Co..... 201

J

Johnson Airplane & Supply Co..... 198

K

Kokomo Aviation Co..... 198

L

Levy, James, Aircraft Co..... 200
Lincoln Standard Aircraft Co..... 200

M

Martin, The Glenn L., Co..... 204

N

Northrop, Marvin A..... 200

P

Packard Motor Car Co..... 177

R

Roos, Victor H..... 199

T

Thomas-Morse Aircraft Corp..... 179

W

War Department..... 176, 178, 188-189
Warner, Edward P..... 200
Wellington, Sears & Co..... 198
Where to Fly..... 196
Wright Aeronautical Corp..... 189

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